

Catalogue of American Amphibians and Reptiles.

SCHWARTZ, ALBERT. 1971. *Anolis distichus*.

***Anolis distichus* Cope**
Bark anole

Anolis distichus Cope, 1861: 208. Type-locality, "New Providence Islands [= Island], Bahamas." Syntypes, Acad. Nat. Sci. Philadelphia 7780-7787, collected by Dr. H. C. Wood, Jr.; date of collection unknown (not seen by author).

• **CONTENT.** Eighteen subspecies are recognized: *distichus*, *aurifer*, *biminiensis*, *dapsilis*, *distichoides*, *dominicensis*, *favillarum*, *floridanus*, *ignigularis*, *juliae*, *ocior*, *patruelis*, *properus*, *ravitergum*, *sejunctus*, *suppar*, *tostus*, and *vinosus*.

• **DEFINITION.** A small (males to 58 mm, females to 48 mm snout-vent length) flattened anole with a short snout and relatively broad head, and paired rows of paramedian snout scales. The dorsal scales are very small and the ventral scales are smooth. The supraorbital semicircles are most often in contact, but are separated by a median series of azygous scales in the Floridian and in some Bahamian populations. A "preoccipital" scale is usually present. The tail is verticillate. The dorsal body color varies from pale tan or pale gray to rich brown or bright green. The dorsal pattern often consists of longitudinal streaking with darker hues of the dorsal ground color. The underside of the tail is yellow to orange, and dewlap color varies (by population) from pale yellow to bright orange or yellow with a large central wine-colored or orange blotch. Paired black nuchal blotches are absent.

• **DESCRIPTIONS.** Cope (1861), Barbour (1914), Mertens (1939), Cochran (1941), Smith and McCauley (1948), Oliver (1948), Carr and Goin (1955), Conant (1958), Duellman and Schwartz (1958) and Schwartz (1968) described external characteristics.

• **ILLUSTRATIONS.** Mertens (1939) presented photographs (dorsal view) of the holotypes of two subspecies (*ignigularis*, "*albidogularis*"), Cochran (1941) gave drawings of the dorsal and lateral view of the heads, lateral view of the caudal scutellation, and a section of dorsal granules of several subspecies (*dominicensis*, *juliae* "*altavelensis*," "*wetmorei*," and "*caudalis*") and dorsal views of the median head scales of several specimens of *dominicensis* from one locality. Oliver (1948) figured the heads (dorsal view) of *distichoides* and *biminiensis*, and Conant (1958) gave a sketch of the dorsal body pattern. Carr and Goin (1955) presented a photograph of *floridanus*. Schwartz (1968) illustrated variation in dorsal head scales in four individuals from different populations and included a color plate showing the head and dewlap color of sixteen subspecies.

• **DISTRIBUTION.** Extreme southeastern Florida (Dade County); the Bahama Islands (including the Great Bank islands, and Cat Island, San Salvador, and Rum Cay); throughout Hispaniola with the notable exception of the Península de Barahona south of the Sierra de Baoruco; the Hispaniolan satellite islands of Ile de la Tortue, Isla Saona, Isla Catalina, Ile-à-Vache, Ile Grande Cayemite and Ile Petite Cayemite; absent from Ile de la Gonâve and Isla Beata (both of which are occupied by *A. brevirostris* Bocourt, an *A. distichus* sibling) and Isla Alto Velo (occupied by *A. altavelensis* Noble and Hassler, which is regarded as specifically distinct from *A. distichus*; Schwartz, 1968). Altitudinal distribution extends from below sea level (vicinity of Lago Enriquillo in the República Dominicana) to 6000 feet (1830 meters) in the Sierra de Baoruco, Massif de la Selle, and the Cordillera Central, Hispaniola.

• **FOSSIL RECORD.** Etheridge (1966) reported *Anolis distichus*

from Pleistocene deposits on New Providence Island in the Bahama Islands.

• **PERTINENT LITERATURE.** The most comprehensive and recent treatment of variation in the species is that of Schwartz (1968); ecological data are also given. Data on ecology and behavior are reported by Duellman and Schwartz (1958) and Mertens (1939). Rand (1962) gives ethological and ecological data for this species, *A. chlorocyanus*, and *A. cybotes*.

• **ETYMOLOGY.** The species name *distichus* (Greek) means "two rows," an allusion to the presence of two paramedian rows of snout scales. The subspecies names were derived as follows: *aurifer*, "gold bearing," in reference to the vivid orange dewlap; *biminiensis* from the type locality, South Bimini Island, Bahama Islands; *dapsilis* (Latin) "plentiful," in reference to its abundance; *distichoides* in allusion to similarities with the nominate subspecies; *dominicensis* for the island of Santo Domingo (= Hispaniola); *favillarum* (Latin) "embers," in allusion to the orange dewlap; *floridanus* from the state of Florida; *ignigularis* (Latin) "fire" and "throat" in allusion to the orange dewlap; *juliae*, named for Julia Adelaide Barbour, daughter of Thomas Barbour; *ocior* (Latin) "more rapid," in reference to agility; *patruelis* (Latin) "relating to a cousin," in allusion to relationships with adjacent populations; *properus* (Latin) "quick" in allusion to speed; *ravitergum* (Latin) "gray" and "back," in reference to the dorsal coloration; *sejunctus* (Latin) "severed," in allusion to the isolated insular distribution of the subspecies; *suppar* (Latin) "almost equal," in reference to the similarities between this population and *dominicensis*; *tostus* (Latin) "parched," in allusion to hot and dry Isla Catalina; and *vinosus* (Latin) "full of wine," in reference to the large wine-colored dewlap blotch.

1. *Anolis distichus distichus* Cope.

Anolis distichus Cope, 1861:208. See species account.

Anolis distichus distichus: Barbour, 1937:125. First use of trinomial.

• **DEFINITION.** Size small (males to 49 mm, females to 44 mm snout-vent length); dorsum pale ashy gray to sandy tan and without a green phase, dewlap pale yellow, rarely with a vague basal to more extensive orange blush; modally 0/0 scales between the supraorbital semicircles and the interparietal; 0/0 supraorbitals in contact with the interparietal; 2/2 scales in contact laterally with the postfrontals; and high number (mean 6.0) of median azygous head scales.

2. *Anolis distichus aurifer* Schwartz.

Anolis distichus aurifer Schwartz, 1968:291. Type-locality, 11 km N Cavaillon, 1300 feet (397 meters), Département du Sud, Haiti. Holotype, Mus. Comp. Zool. 81135, adult male, collected by D. R. Paulson, D. C. Leber and natives, 6 August 1962.

• **DEFINITION.** Size moderate (males to 54 mm, females to 46 mm snout-vent length); dorsum heavily marbled with varying shades of greens and browns; dewlap vivid orange with narrow yellow border; modally 1/1 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; moderate number (mean 3.7) of median azygous head scales.

3. *Anolis distichus biminiensis* Oliver.

Anolis distichus biminiensis Oliver, 1948:16. Type-locality, "western end of South Bimini Island, Bimini, Bahamas, British West Indies." Holotype, adult male, Amer. Mus. Nat. Hist. 68640, collected by J. A. Oliver, 8 October 1947 (not examined by author).

• **DEFINITION.** Size small (males to 50 mm, females to 44 mm snout-vent length); dorsum pale gray and without a

green phase; dewlap orange; modally 0/0 scales between supraorbital semicircles and interparietal; 3/3 scales in contact laterally with postfrontals; high median number (mean 5.5) of median azygous head scales.

4. *Anolis distichus dapsilis* Schwartz.

Anolis distichus dapsilis Schwartz, 1968:270. Type-locality, "ocean side, opposite Hatchet Bay, Eleuthera Island, Bahama Islands." Holotype, Mus. Comp. Zool. 81139, adult male, collected by R. Thomas, 15 June 1966.

• DEFINITION. Size small (males to 50 mm, females to 45 mm snout-vent length); dorsum pale ashy gray with yellowish cast and without green phase; dewlap orange, occasionally with a very narrow yellow border; modally 0/0 scales between supraorbital semicircles and interparietal; 0/0 and 1/2 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; high number (mean 6.2) of median azygous head scales.

5. *Anolis distichus distichoides* Rosén.

Anolis distichoides Rosén, 1911:29. Type-locality, "Mastic Point and Stanniard Creek on Andros" [Island, Bahama Islands]. Holotype, apparently a male, collected by N. Rosén, between "end of April 1908 to the beginning of the same month the following year," presumably in the Zool. Mus. Univ. Lund (not examined by author).

Anolis distichus distichoides: Barbour, 1937:125. First use of combination.

• DEFINITION. Size moderate (males to 51 mm, females to 43 mm snout-vent length); dorsum grayish tan to gray and without a green phase; entire dewlap orange to yellowish orange; modally 1/1 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; very high number (mean 8.7) of median azygous head scales correlated with high incidence (about 40 per cent) of complete separation of supraorbital semicircles medially.

6. *Anolis d. dominicensis* Reinhardt & Lutken.

Anolis dominicensis Reinhardt and Lutken, 1863:261. Type-locality, "Haiti"; restricted by Schwartz (1968:274) to Port-au-Prince, Département de l'Ouest, Haiti. Syntypes, Univ. Zool. Mus., København, 37114-15, male and female, collected by A. H. Riise, date unknown but prior to 1862 (not seen by author).

Anolis bauritus Meerwarth, 1901:23. Type locality, "Haiti." Syntypes, Hamburg Mus. 1486a-c, sexes not given, collected by Tippenhauer, 1893 (not seen by author).

Anolis distichus dominicensis: Barbour, 1937:126. First use of combination.

Anolis distichus albidogularis Mertens, 1939:59. Type-locality, "Monte Cristi," (Monte Cristi Province, República Dominicana). Holotype, Senckenberg-Mus. 25855, male, collected by R. Mertens, 19 March 1939 (not seen by author).

• DEFINITION. Size very large (males to 58 mm, females to 48 mm snout-vent length); dorsum varying between all green and all dark brown with darker longitudinal striae in all phases; dewlap pale yellow (occasionally white to almost so) to yellow with a faint orange basal blush; modally 1/1 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontal; moderate number (mean 3.9) of median azygous head scales.

• REMARKS. Intergrades between *dominicensis* and *ignigularis* occur in the eastern portion of the Dominican Cordillera Central, and between *dominicensis* and *ravitergum* in Azua Province. Established in Miami, Florida (King and Krakauer, 1966). The status of the Ile de la Tortue populations, currently regarded as *dominicensis*, is uncertain.

7. *Anolis distichus favillarum* Schwartz.

Anolis distichus favillarum Schwartz, 1968:289. Type-locality, "3 km N Las Auyamas, 3300 feet (1007 meters), Barahona Province, República Dominicana." Holotype, Mus. Comp. Zool. 81133, adult male, collected by D. C. Leber, 24 July 1963.

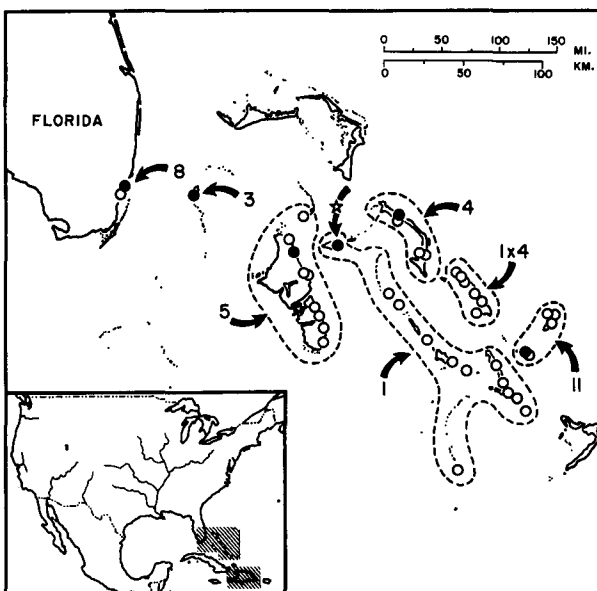
• DEFINITION. Size moderate (males to 54 mm, females to 47 mm snout-vent length); dorsum bright dark green, heavily striated with darker green or brownish, head with rusty temples, interparietal scale yellow-green and sharply set off; dewlap vivid orange centrally with a narrow pale yellow edge; modally 1/1 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; moderate number (mean 3.8) of median azygous head scales.

8. *Anolis d. floridanus* Smith and McCauley.

Anolis distichus floridanus Smith and McCauley, 1948:160. Type-locality, "Brickell Park, Miami, [Dade County,] Florida." Holotype, U.S. Natl. Mus. 127114, adult male, collected by R. H. McCauley, 6 November 1946 (not seen by author).

• DEFINITION. Size small (males to 50 mm, females to 45 mm snout-vent length), dorsum gray to dark brown and without a green phase; dewlap pale yellow (occasionally pale orange); modally 1/1 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/3 scales in contact laterally with postfrontals; very high number (mean 7.9) of median azygous head scales correlated with very high incidence (about 60 per cent) of complete separation of supraorbital semicircles medially.

• REMARKS. *A. d. floridanus* was considered (Duellman and Schwartz, 1958) synonymous with *A. d. distichus*, but Schwartz (1968) showed that *floridanus* and *distichus* are not identical. Schwartz postulated that *A. d. floridanus* may have either differentiated locally in Florida (where its known range is extremely limited) or that it may be a western Andros population which has become established in Florida.



MAP 1. Distributions of *Anolis distichus* in Florida and the Bahamas. Solid circles indicate type localities, open circles mark other localities, star marks a fossil record. Broken lines enclose ranges of subspecies known from more than one restricted area.

9. *Anolis distichus ignigularis* Mertens.

Anolis distichus ignigularis Mertens, 1939:58. Type-locality, "San Pedro de Macoris," (San Pedro de Macoris Province, República Dominicana). Holotype, Senckenberg-Mus. 25694, adult male, collected by R. Mertens, 6 March 1939 (not seen by author).

• DEFINITION. Size moderate (males to 55 mm, females to 44 mm snout-vent length); dorsum usually green anteriorly, rich translucent reddish tan posteriorly (but capable of turning completely brown); dewlap vivid orange centrally with a narrow yellow margin; modally 0/0 scales between supraorbital semicircles and interparietal; 1/2 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; low number (mean 3.5) of median azygous head scales.

10. *Anolis distichus juliae* Cochran.

Anolis dominicensis juliae Cochran, 1934:169. Type-locality, "Isle Vache" (= Ile-à-Vache), Haiti. Holotype, Mus. Comp. Zool. 37517, adult male, collected by Utowana Expedition, 12 April 1934 (not seen by author).

Anolis distichus juliae: Barbour, 1937:126. First use of combination.

• DEFINITION. Size moderate (males to 53 mm, females to 44 mm snout-vent length); dorsum brownish gray to green, somewhat marbled with darker browns and greens; dewlap almost completely dark wine-red with pale yellow margin; modally 0/0 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; low number (mean 3.4) of median azygous head scales.

11. *Anolis distichus ocior* Schwartz.

Anolis distichus ocior Schwartz, 1968:271. Type-locality, "Port Nelson, Rum Cay, Bahama Islands." Holotype, Mus. Comp. Zool. 81149, adult male, collected by A. Schwartz and R. Thomas, 20 June 1966.

• DEFINITION. Size moderate (males to 53 mm, females to 48 mm snout-vent length); dorsum yellow-gray to brown with a prominent pale flank stripe between fore- and hindlimbs bordered above and below by dark brown or gray, and with pea-green phase; dewlap pale yellow; modally 0/0 scales between supraorbital semicircles and interparietal; 1/1 supra-

orbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; high number (mean 5.8) of median azygous head scales.

12. *Anolis distichus patruelis* Schwartz.

Anolis distichus patruelis Schwartz, 1968:297. Type-locality, "vicinity of Pointe Sable, Ile Grande Cayemite," Haiti. Holotype, Mus. Comp. Zool. 81138, adult male, collected by R. Thomas and native collectors, 18 March 1966.

• DEFINITION. Size small (males to 50 mm, females to 42 mm snout-vent length); dorsum green to gray, usually not prominently striate; dewlap solid dark reddish to mustard orange; modally 1/1 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; moderate number (mean 4.6) of median azygous head scales.

13. *Anolis distichus properus* Schwartz.

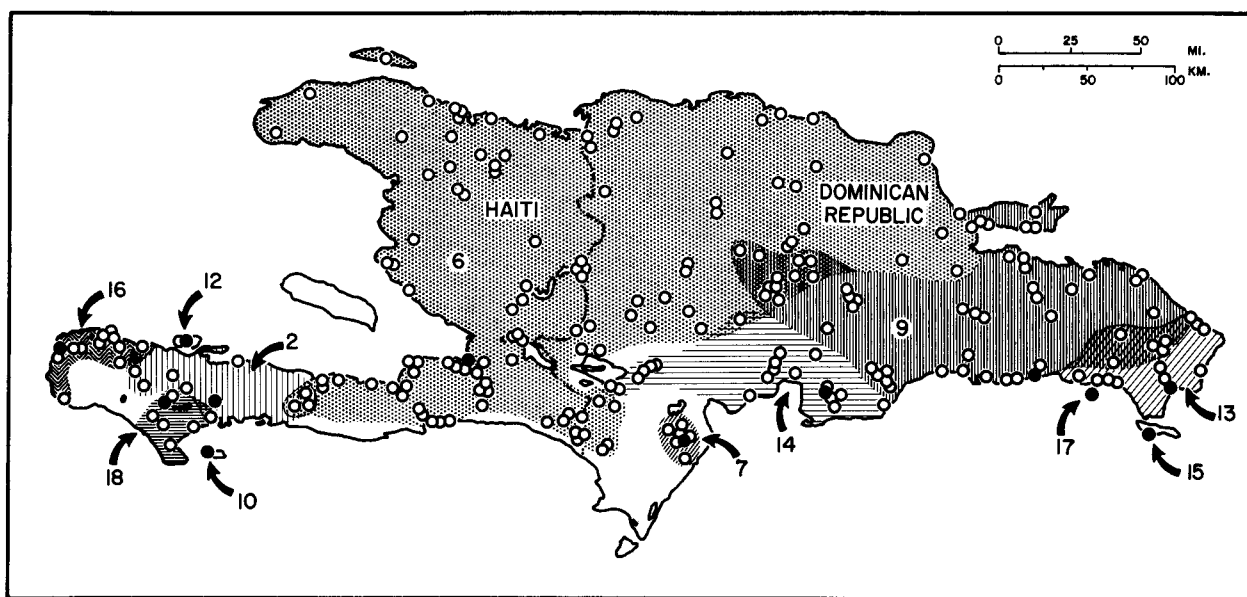
Anolis distichus properus Schwartz, 1968:282. Type-locality, "0.5 mi. (0.8 km) NW Boca de Yuma, La Romana [= Altagracia] Province, República Dominicana." Holotype, Mus. Comp. Zool. 81130, adult male, collected by R. F. Klinikowski, 31 August 1963.

• DEFINITION. Size moderate (males to 54 mm, females to 45 mm snout-vent length); dorsum plain ashy to very pale green (rarely), without distinct dark markings on head; dewlap very pale yellow with occasionally a pale central orange blush; modally 0/0 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; very low number (mean 2.8) of median azygous head scales.

14. *Anolis distichus ravitergum* Schwartz.

Anolis distichus ravitergum Schwartz, 1968:287. Type-locality, "16.5 mi. (26.4 km) S San José de Ocoa, 500 feet (122 meters), Peravia Province, República Dominicana." Holotype, Mus. Comp. Zool. 81132, adult male, collected by R. F. Klinikowski, A. Schwartz, and R. Thomas, 24 August 1963.

• DEFINITION. Size large (males to 56 mm, females to 45 mm snout-vent length); dorsum ashy gray to tan or pale greenish, head usually with a distinct interocular dark brown bar, and dark U extending from eyes across occiput; dewlap



MAP 2. Distribution of *Anolis distichus* on Hispaniola and adjacent localities. See Map 1 (inset) for relationship of Hispaniola to remainder of species range.

pale yellow occasionally with faint orange center; modally 0/0 scales between supraorbital semicircles and interparietal; 1/1 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; very low number (mean 2.6) of median azygous head scales.

15. *Anolis distichus sejunctus* Schwartz.

Anolis distichus sejunctus Schwartz, 1968:284. Type-locality, "environs of Mano Juan, Isle Saona, República Dominicana." Holotype, Mus. Comp. Zool. 81131, adult male, collected by R. Thomas, 19 July 1964.

• DEFINITION. Size small (males to 51 mm, females to 41 mm snout-vent length); dorsum light gray with darker spots and flecks, suffused with greenish yellow; head without distinct dark markings; dewlap uniform pale yellow; modally 0/0 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; moderate number (mean 3.8) of median azygous head scales.

16. *Anolis distichus suppar* Schwartz.

Anolis distichus suppar Schwartz, 1968:295. Type-locality, Dame-Marie, south side of town along coast, Département du Sud, Haiti. Holotype, Mus. Comp. Zool. 81137, adult male, collected by R. Thomas, 13 March 1966.

• DEFINITION. Size moderate (males to 54 mm, females to 44 mm snout-vent length); dorsum pale green somewhat marbled with gray and yellow; dewlap pale yellow to yellow-green or grayish yellow and occasionally with a dull yellow-orange basal smudge; modally 1/1 scales between supraorbital semicircles and interparietal; 0/0 supraorbital scales in contact with interparietal; 2/2 scales in contact laterally with postfrontals; low number (mean 3.4) of median azygous head scales.

17. *Anolis distichus tostus* Schwartz.

Anolis distichus tostus Schwartz, 1968:286. Type-locality, "Isla Catalina, western end, República Dominicana." Holotype, Mus. Comp. Zool. 81134, adult male, collected by R. Thomas, 20 August 1963.

• DEFINITION. Size small (males to 50 mm, females to 40 mm snout-vent length); dorsum yellow-tan with little or no flecking or striations and no head pattern; dewlap deep orange centrally, border yellow; modally 0/0 scales between supraorbital semicircles and interparietal; 1/1 supraorbital scales in contact with interparietal; 3/3 scales in contact laterally with postfrontals; moderate number (mean 4.0) of median azygous head scales.

18. *Anolis distichus vinosus* Schwartz.

Anolis distichus vinosus Schwartz, 1968:293. Type-locality, Camp Perrin, Département du Sud, Haiti. Holotype, Mus. Comp. Zool. 81136, adult male, collected by native collectors, 22 July 1962.

• DEFINITION. Size moderate (males to 54 mm, females to 45 mm snout-vent length); dorsum marbled with greens and browns of varying shades; dewlap with restricted basal maroon (wine-colored) blotch or spot and broad pale yellow margin; modally 1/1 scales between supraorbital semicircles and interparietal; 0/0 supraorbitals in contact with interparietal; 2/2 scales in contact laterally with postfrontals; low number (mean 3.4) of median azygous head scales.

COMMENT

Mertens (1939), Cochran (1941), and later authors considered several other populations as subspecies of *A. distichus*: including *altavelensis* Noble and Hassler, *caudalis* Cochran, *wetmorei* Cochran, and *brevirostris* Bocourt. Schwartz (1968) and Williams and Rand (1969) recognize *Anolis brevirostris*

as distinct from *A. distichus*. *A. brevirostris* includes, in addition to the nominate subspecies, *caudalis* on Ile de la Gonâve and *wetmorei* on Isla Beata, and several other populations of this species are surely noteworthy. Schwartz (1968) considered *altavelensis* distinct from both *A. distichus* and *A. brevirostris*.

The revised data for subspecies *tostus* and *sejunctus* in the present account differ from those presented by Schwartz (1968); much additional material, collected under NSF GB-7977, has made these refinements possible.

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